Claims

1. Method for automated measurement of the ohmic rotor resistance (R_r) of an asynchronous machine controlled via an inverter while being acted upon by a non-rotating field, the method comprising
   a. measuring the ohmic stator resistance (R_s), the leakage inductances ($L_{\sigma s}$, $L_{\sigma r}$) and the main inductance (L_m) of the asynchronous machine,
   b. applying a testing signal (U_{sa}) consisting of a predetermined direct signal with a superimposed alternating signal to a phase winding (a) of the asynchronous machine, the frequency of the alternating signal corresponding approximately to a nominal slip frequency (f_s) of the asynchronous machine,
   c. measuring the amplitude and the phase (φ) of the phase signal($\underline{I}_{sa}$) resulting from the testing signal, and
   d. calculating the ohmic rotor resistance (R_r) from the measured values according to steps a) and c).

2. Method according to claim 1, in which an ohmic rotor resistance (R'_r) transformed to the stator side is determined first, and the actual ohmic rotor resistance (R_r) is calculated by means of the measured values according to steps a) and c).

3. Method according to claim 1 in which the frequency (f_s) of the alternating signal is in the range from 1 to 8 Hz.

4. Method according to claim 1 in which the direct signal is a direct voltage which generates a direct current having an amplitude of less than half a nominal magnetising current (I_{mn}) of the asynchronous machine.

5. Method according to claim 4, in which the direct current is such that the dynamic main inductance (L_{Dm}) is approximately equal to the static main inductance (L_m) of the asynchronous machine, whereby the dynamic main inductance can be expressed by the equation

$$L_{Dm} = \frac{dL_m}{dI_m} \cdot I_m + L_m$$

in which L_{Dm} is the dynamic main inductance, L_m the static main inductance and I_m the magnetising current.

6. Method according to claim 1 in which the testing signal is a phase voltage (U_{sa}) having a reference (U_{ref}) set on the basis of a previously measured characteristic, stored in a memory, the characteristic describing the relation between the phase current (I_{sa}) and the reference.